Cooper Lighting Solutions Photometric Lab
1121 Highway 74 South
Peachtree City, GA 30269

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Peachtree City, GA 30269

Scaled data based on original data using

LM-79-2024 Approved Method: Electrical and Photometric Measurements of Solid-State Lighting Products

Test Report Prepared for

Cooper Lighting Solutions

Brand: McGRAW-EDISON

Report Number: P1197969

Luminaire Tested: GPC-SB1B-830-U-T2

Issue Date: 10/30/2025

Cooper Lighting Solutions Photometric Lab
1121 Highway 74 South
Peachtree City, GA 30269

Scaled Data Report

**Test Information**

| | |
|---|---|
| Test Method: | LM-79-2024 |
| Report Number: | P1197969 |
| | TEST IS SCALED FROM IESNA LM-79-08 TEST DATA (G2-2405-108-3) |
| Test Lab: | INNOVATION CENTER |
| Issue Date: | 3/15/2026 |
| Manufacturer: | COOPER LIGHTING SOLUTIONS |
| Product Line: | McGRAW-EDISON |
| Catalog Number: | GPC-SB1B-830-U-T2 |
| Description: | GALLEON PEDESTRIAN LUMINAIRE |
| | (1) 80 CRI, 3000K, 450mA LIGHTSQUARE WITH 26 LEDS AND TYPE II OPTICS |
| Light Source: | - |
| Ballast/Driver: | ELECTRONIC DRIVER |

**Summary**

| | |
|---|---|
| Lumens per Lamp: | N/A |
| Luminaire Lumens: | 5040 lumens |
| Efficiency: | N/A |
| Efficacy: | 126.6 lumens/watt |
| Luminous Opening: | Rectangular (W 0.5' x L: 0.5' x H: 0') |
| IES Classification: | Type II - Medium |
| BUG Rating: | B1 - U0 - G1 |

| | |
|---|---|
| Input Watts (W): | 39.8 |
| Input Voltage (V): | 120.0 |
| Input Current (Ain): | 0.33 |
| Voltage Rise (V): | NR |
| Power Factor: | 0.996 |
| Total Harmonic Distortion (THDi): | 5.305 |
| Frequency (hertz): | 60 |
| Stabilization Time: | NR |
| Operation Time: | NR |
| Ambient Temperature (°C): | NR |
| Test Distance: | 28.75 FT |

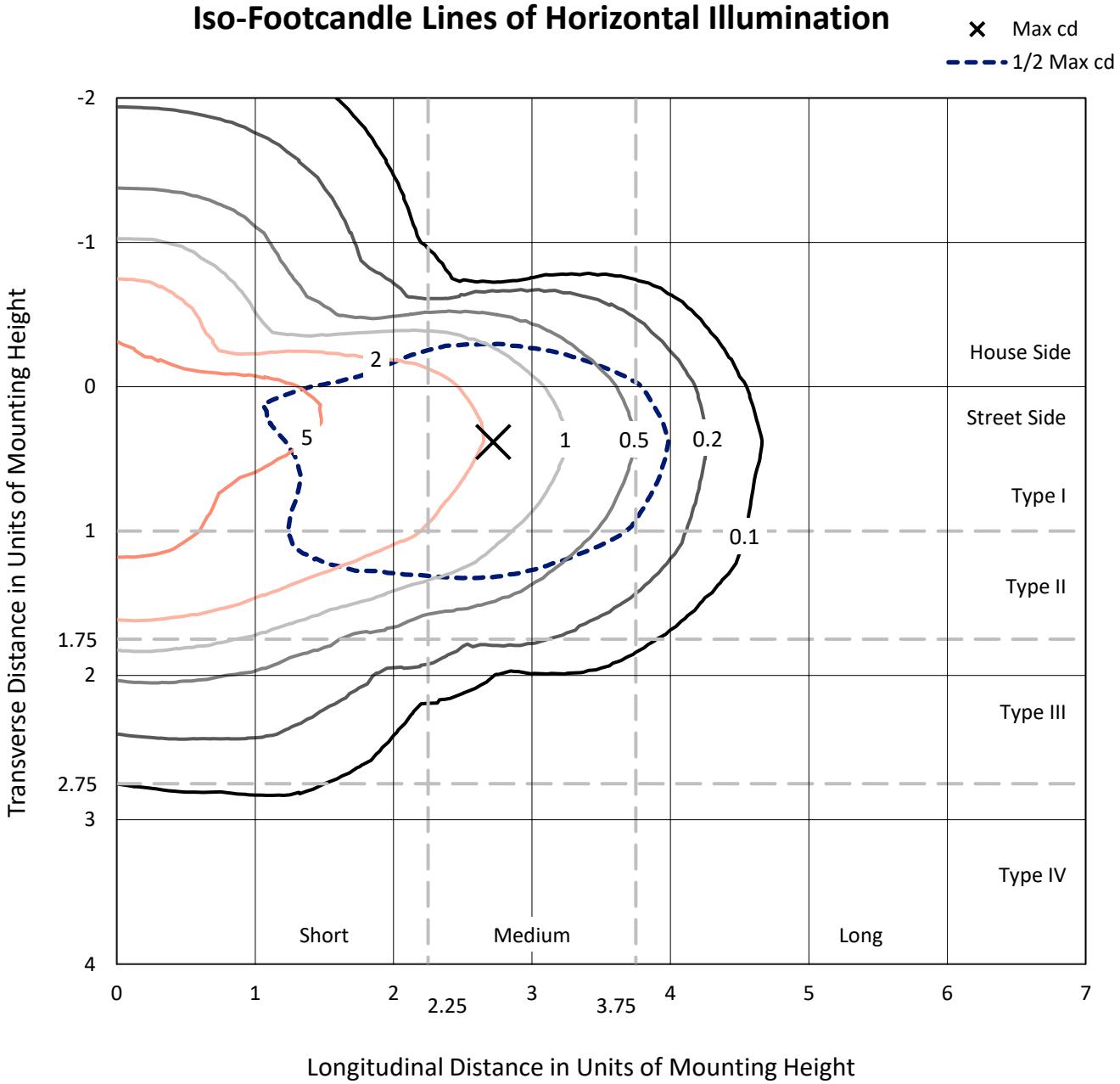


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REPORT NUMBER: P1197969
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## Iso-Footcandle Lines of Horizontal Illumination



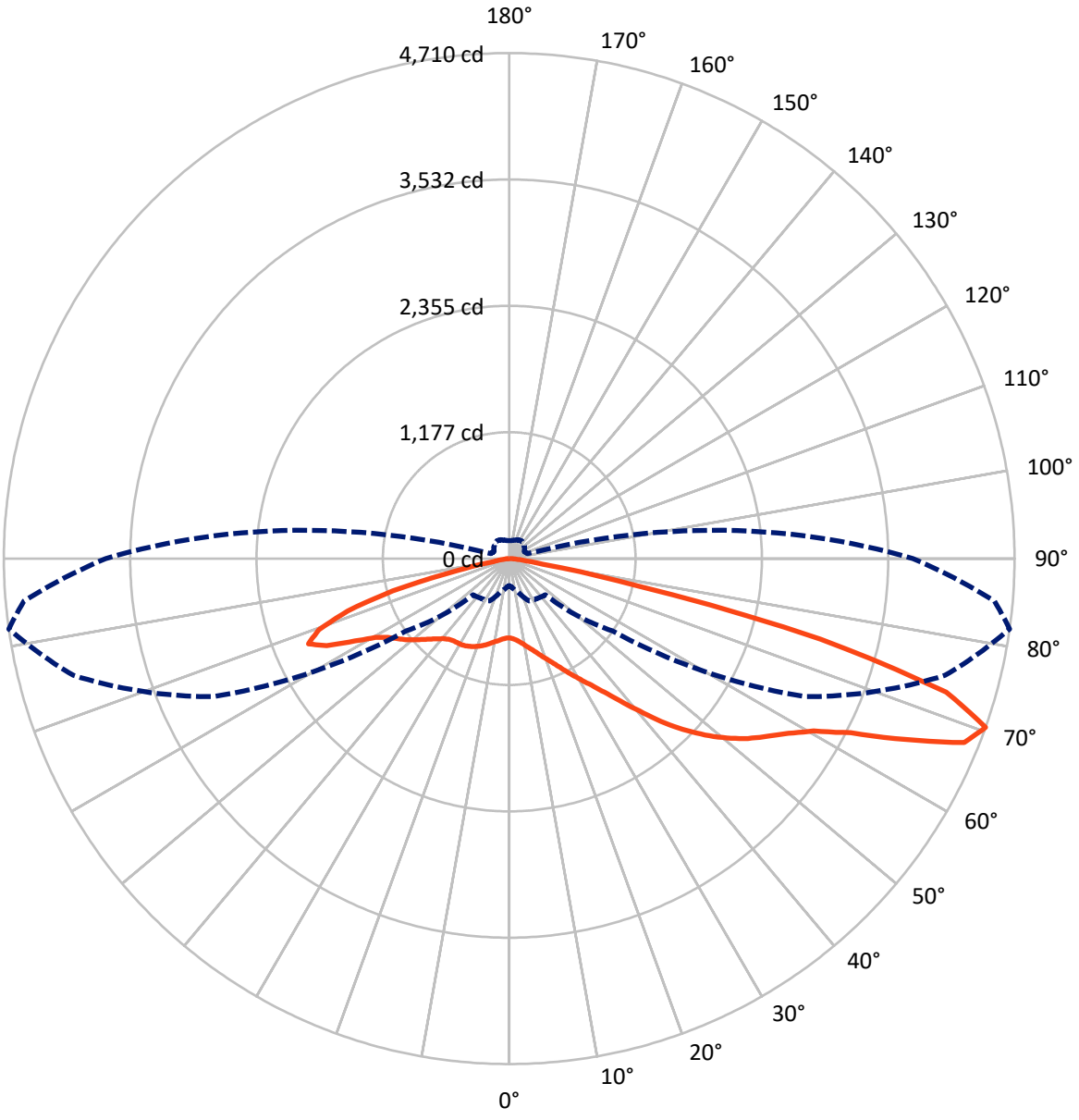

Based on 10 foot mounting height. Maximum calculated value = 8.4 fc
Type II - Medium - N/A

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## Luminous Intensity Polar Plot



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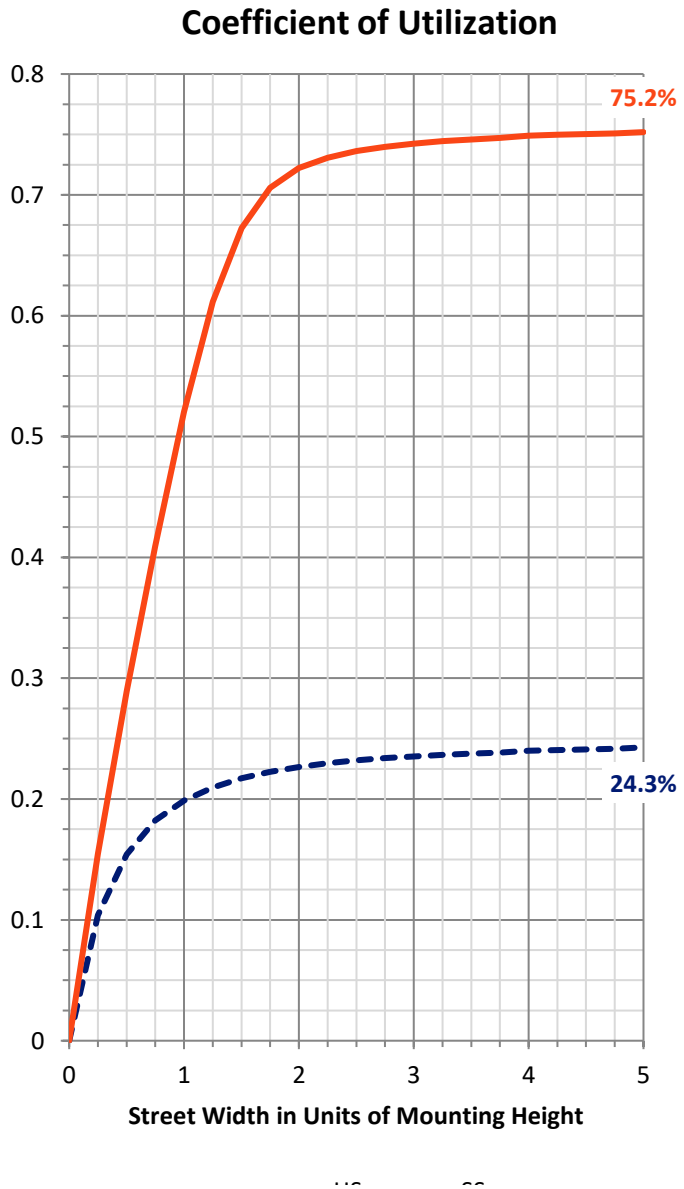
REPORT NUMBER: P1197969
CATALOG NUMBER: GPC-SB1B-830-U-T2

**FLUX DISTRIBUTION:**

| | | Downward | Upward | Total |
|---|---|---|---|---|
| **House Side** | Lumens | 1242.5 | 0.0 | 1242.5 |
| | % Fixture | 24.7 | 0.0 | 24.7 |
| **Street Side** | Lumens | 3797.5 | 0.0 | 3797.5 |
| | % Fixture | 75.3 | 0.0 | 75.3 |
| **Total** | Lumens | 5040.0 | 0.0 | 5040.0 |
| | % Fixture | 100.0 | 0.0 | 100.0 |

**ZONAL LUMENS:**

| Zone | Lumens | % Fixture |
|---|---|---|
| 0°-10° | 69.8 | 1.4 |
| 10°-20° | 200.4 | 4.0 |
| 20°-30° | 335.3 | 6.7 |
| 30°-40° | 523.9 | 10.4 |
| 40°-50° | 834.3 | 16.6 |
| 50°-60° | 1161.1 | 23.0 |
| 60°-70° | 1214.5 | 24.1 |
| 70°-80° | 634.8 | 12.6 |
| 80°-90° | 65.9 | 1.3 |
| 90°-100° | 0.0 | 0.0 |
| 100°-110° | 0.0 | 0.0 |
| 110°-120° | 0.0 | 0.0 |
| 120°-130° | 0.0 | 0.0 |
| 130°-140° | 0.0 | 0.0 |
| 140°-150° | 0.0 | 0.0 |
| 150°-160° | 0.0 | 0.0 |
| 160°-170° | 0.0 | 0.0 |
| 170°-180° | 0.0 | 0.0 |
| 0°-90° | 5040.0 | 100.0 |
| 0°-180° | 5040.0 | 100.0 |



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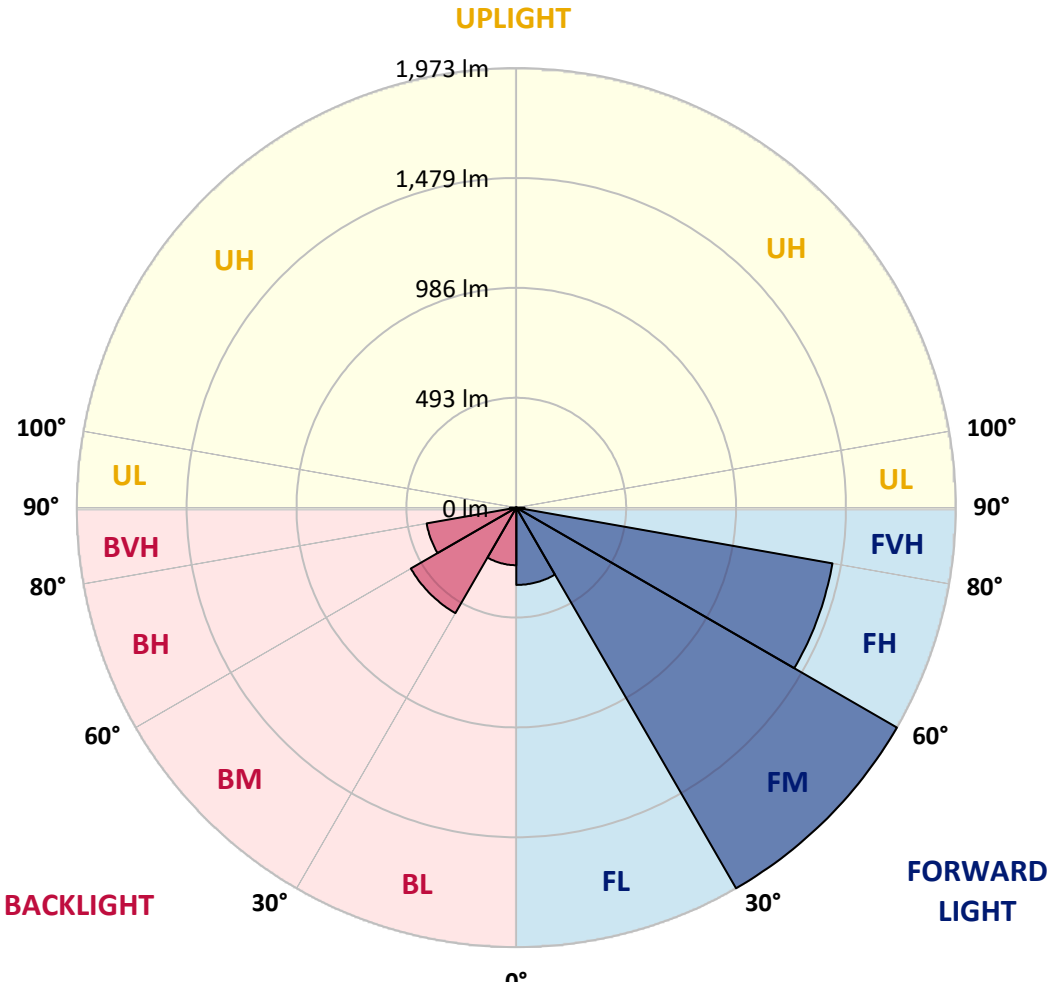
Scaled Data Report

REPORT NUMBER: P1197969
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## LUMINAIRE CLASSIFICATION SYSTEM LUMEN TABLE AND BUG RATING:

| Zone | | Lumens | % Fixture | Zone Rating/Lumen Limit B | U | G |
|---|---|---|---|---|---|---|
| FL | (0°-30°) | 347.1 | 6.9 | | | |
| FM | (30°-60°) | 1972.6 | 39.1 | | | |
| FH | (60°-80°) | 1440.9 | 28.6 | | | G1/1800 |
| FVH | (80°-90°) | 36.9 | 0.7 | | | G1/100 |
| BL | (0°-30°) | 258.5 | 5.1 | B1/500 | | |
| BM | (30°-60°) | 546.6 | 10.8 | B1/1000 | | |
| BH | (60°-80°) | 408.3 | 8.1 | B1/500 | | G1/500 |
| BVH | (80°-90°) | 29.0 | 0.6 | | | G1/100 |
| UL | (90°-100°) | 0.0 | 0.0 | | U0/0 | |
| UH | (100°-180°) | 0.0 | 0.0 | | U0/0 | |

**BUG Rating: B1-U0-G1**
Type II Medium



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**CANDELA DISTRIBUTION (FULL):**

| | 0° | 5° | 15° | 25° | 35° | 45° | 55° | 65° | 75° | 82° | 85° |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 0° | 738.9 | 738.9 | 738.9 | 738.9 | 738.9 | 738.9 | 738.9 | 738.9 | 738.9 | *738.9* | 738.9 |
| 2.5° | 756.6 | 760.9 | 759.5 | 758.2 | 758.2 | 756.3 | 756.0 | 753.4 | 751.2 | *747.8* | 747.0 |
| 5° | 766.2 | 770.8 | 770.2 | 771.3 | 774.8 | 775.6 | 776.4 | 774.8 | 770.5 | *766.2* | 764.3 |
| 7.5° | 757.6 | 762.7 | 764.3 | 770.8 | 781.4 | 791.1 | 798.3 | 801.2 | 797.2 | *791.1* | 788.1 |
| 10° | 728.8 | 734.4 | 740.0 | 755.2 | 774.2 | 797.0 | 816.2 | 827.7 | 826.9 | *821.0* | 815.9 |
| 12.5° | 670.2 | 676.1 | 688.1 | 717.8 | 752.6 | 792.7 | 828.5 | 852.6 | 860.9 | *856.6* | 847.8 |
| 15° | 623.4 | 628.5 | 637.6 | 668.1 | 713.3 | 774.2 | 833.1 | 879.9 | 901.0 | *898.6* | 887.9 |
| 17.5° | 622.1 | 624.2 | 629.8 | 644.3 | 679.0 | 745.3 | 828.3 | 906.6 | 947.0 | *946.7* | 933.4 |
| 20° | 645.6 | 646.4 | 649.6 | 652.5 | 672.3 | 723.4 | 815.9 | 928.8 | 998.6 | *998.6* | 984.2 |
| 22.5° | 678.2 | 677.7 | 680.9 | 678.2 | 687.8 | 721.5 | 808.2 | 948.3 | 1056.1 | *1060.4* | 1042.2 |
| 25° | 727.2 | 724.5 | 723.7 | 717.5 | 719.4 | 738.9 | 816.8 | 970.5 | 1124.3 | *1133.1* | 1110.4 |
| 27.5° | 792.4 | 788.1 | 785.2 | 771.0 | 766.2 | 774.8 | 843.0 | 997.3 | 1200.3 | *1215.5* | 1186.6 |
| 30° | 877.5 | 869.7 | 865.4 | 840.8 | 823.4 | 824.8 | 882.5 | 1032.8 | 1279.7 | *1304.3* | 1267.6 |
| 32.5° | 993.5 | 981.5 | 970.0 | 929.6 | 897.8 | 887.4 | 933.6 | 1082.0 | 1365.8 | *1405.1* | 1358.0 |
| 35° | 1123.5 | 1113.9 | 1101.6 | 1039.3 | 990.3 | 966.2 | 1002.6 | 1150.8 | 1466.6 | *1528.9* | 1467.7 |
| 37.5° | 1248.7 | 1240.4 | 1246.3 | 1162.3 | 1099.2 | 1064.1 | 1093.0 | 1243.0 | 1591.0 | *1683.0* | 1605.2 |
| 40° | 1378.1 | 1371.7 | 1372.5 | 1292.3 | 1218.7 | 1179.4 | 1202.7 | 1358.8 | 1733.5 | *1866.2* | 1770.4 |
| 42.5° | 1518.8 | 1514.0 | 1497.9 | 1426.8 | 1344.1 | 1307.5 | 1328.9 | 1492.6 | 1886.5 | *2074.8* | 1951.8 |
| 45° | 1676.3 | 1673.4 | 1658.4 | 1576.8 | 1482.1 | 1440.9 | 1469.8 | 1640.2 | 2040.3 | *2271.1* | 2133.9 |
| 47.5° | 1812.4 | 1814.8 | 1813.0 | 1744.2 | 1646.1 | 1585.6 | 1620.1 | 1794.2 | 2183.4 | *2455.6* | 2308.5 |
| 50° | 1877.9 | 1890.5 | 1909.0 | 1887.6 | 1826.6 | 1765.1 | 1771.8 | 1942.9 | 2319.7 | *2628.6* | 2475.9 |
| 52.5° | 1843.7 | 1867.5 | 1917.8 | 1952.0 | 1975.6 | 1962.7 | 1944.8 | 2090.6 | 2448.1 | *2784.8* | 2634.2 |
| 55° | 1716.1 | 1749.6 | 1833.0 | 1915.6 | 2035.7 | 2129.1 | 2152.6 | 2254.2 | 2573.3 | *2922.3* | 2784.0 |
| 57.5° | 1483.7 | 1538.0 | 1612.9 | 1780.1 | 1982.2 | 2209.6 | 2394.9 | 2481.3 | 2705.9 | *3069.1* | 2940.7 |
| 60° | 1085.3 | 1158.0 | 1251.1 | 1499.8 | 1795.0 | 2166.5 | 2601.1 | 2830.0 | 2894.5 | *3259.2* | 3144.8 |
| 62.5° | 694.5 | 739.5 | 825.0 | 1059.3 | 1398.7 | 1945.9 | 2664.2 | 3265.9 | 3214.1 | *3571.1* | 3450.7 |
| 65° | 475.5 | 504.4 | 582.7 | 714.3 | 904.2 | 1448.4 | 2495.2 | 3592.7 | 3721.6 | *4065.3* | 3973.8 |
| 67.5° | 345.5 | 367.5 | 434.3 | 549.6 | 589.2 | 857.1 | 1936.2 | 3577.8 | 4215.1 | *4574.5* | 4432.2 |
| 70° | *251.9* | *267.4* | *323.6* | *434.3* | *453.3* | *476.8* | *1173.0* | *3041.3* | *4204.4* | *4709.8* | *4539.5* |
| 72.5° | 186.7 | 197.4 | 235.1 | 337.0 | 366.9 | 322.0 | 580.6 | 2210.4 | 3612.8 | *4260.0* | 4123.3 |
| 75° | 135.1 | 143.1 | 170.9 | 257.8 | 293.6 | 245.2 | 289.6 | 1291.7 | 2520.1 | *2996.6* | 3020.7 |
| 77.5° | 103.2 | 109.4 | 127.6 | 188.8 | 235.1 | 184.0 | 179.7 | 594.2 | 1194.9 | *1200.8* | 1268.2 |
| 80° | 82.9 | 86.9 | 96.8 | 132.9 | 180.3 | 137.7 | 117.1 | 239.9 | 377.6 | *319.6* | 335.4 |
| 82.5° | 61.0 | 67.7 | 81.8 | 93.3 | 128.9 | 94.9 | 71.4 | 121.1 | 143.6 | *123.6* | 124.6 |
| 85° | 34.8 | 39.3 | 49.5 | 66.9 | 82.4 | 58.0 | 40.9 | 53.8 | 66.9 | *54.8* | 48.9 |
| 87.5° | 12.3 | 16.0 | 17.4 | 26.2 | 35.8 | 24.1 | 15.8 | 15.5 | 21.9 | *16.3* | 13.6 |
| 90° | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | *0.0* | 0.0 |

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Scaled Data Report

REPORT NUMBER: P1197969
CATALOG NUMBER: GPC-SB1B-830-U-T2

**CANDELA DISTRIBUTION (continued):**

| | 90° | 95° | 105° | 115° | 125° | 135° | 145° | 155° | 165° | 175° | 180° |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 0° | 738.9 | 738.9 | 738.9 | 738.9 | 738.9 | 738.9 | 738.9 | 738.9 | 738.9 | 738.9 | 738.9 |
| 2.5° | 744.3 | 742.9 | 737.6 | 730.4 | 722.9 | 715.7 | 713.3 | 708.2 | 704.7 | 702.8 | 705.0 |
| 5° | 759.3 | 755.0 | 742.4 | 726.4 | 709.5 | 691.3 | 678.5 | 666.7 | 658.2 | 650.1 | 653.3 |
| 7.5° | 780.6 | 773.2 | 751.5 | 723.4 | 693.5 | 663.2 | 640.8 | 623.7 | 612.2 | 604.7 | 606.3 |
| 10° | 805.5 | 794.0 | 760.9 | 718.9 | 672.6 | 629.3 | 602.8 | 588.1 | 580.9 | 576.9 | 577.9 |
| 12.5° | 834.1 | 817.8 | 770.5 | 708.4 | 640.8 | 591.3 | 573.1 | 568.8 | 569.1 | 569.4 | 569.9 |
| 15° | 869.4 | 846.7 | 778.2 | 685.7 | 599.3 | 562.2 | 558.9 | 565.9 | 573.1 | 576.6 | 576.3 |
| 17.5° | 909.3 | 877.2 | 779.6 | 648.3 | 558.7 | 543.4 | 553.6 | 568.6 | 579.5 | 584.3 | 585.4 |
| 20° | 952.1 | 908.2 | 769.9 | 595.3 | 525.2 | 528.2 | 546.4 | 565.6 | 577.7 | 583.8 | 585.4 |
| 22.5° | 1001.0 | 941.4 | 747.0 | 539.7 | 498.0 | 511.6 | 533.0 | 551.7 | 564.3 | 570.4 | 572.0 |
| 25° | 1056.9 | 978.6 | 710.8 | 492.9 | 474.4 | 492.9 | 514.3 | 529.8 | 540.0 | 545.6 | 547.2 |
| 27.5° | 1119.0 | 1017.3 | 662.7 | 455.7 | 453.8 | 473.6 | 491.3 | 503.3 | 508.7 | 512.9 | 514.5 |
| 30° | 1181.3 | 1052.6 | 604.4 | 427.6 | 435.9 | 454.6 | 467.2 | 472.6 | 474.2 | 475.0 | 476.8 |
| 32.5° | 1248.7 | 1083.1 | 543.2 | 404.4 | 418.8 | 436.2 | 443.7 | 446.1 | 438.6 | 433.5 | 435.1 |
| 35° | 1330.2 | 1115.7 | 483.3 | 385.9 | 402.0 | 416.9 | 419.3 | 417.2 | 408.4 | 397.9 | 398.5 |
| 37.5° | 1431.1 | 1156.4 | 435.4 | 372.8 | 386.2 | 396.1 | 393.1 | 392.6 | 393.4 | 381.1 | 381.9 |
| 40° | 1554.6 | 1209.3 | 400.4 | 362.6 | 373.3 | 375.5 | 367.2 | 371.7 | 375.7 | 357.0 | 357.6 |
| 42.5° | 1691.8 | 1273.3 | 378.2 | 355.7 | 362.6 | 357.6 | 344.7 | 349.8 | 349.3 | 324.7 | 324.4 |
| 45° | 1831.7 | 1342.8 | 370.4 | 350.6 | 352.7 | 342.6 | 328.4 | 329.7 | 318.5 | 296.3 | 297.1 |
| 47.5° | 1970.7 | 1417.4 | 375.2 | 346.3 | 340.4 | 328.9 | 318.0 | 312.1 | 295.5 | 278.9 | 278.9 |
| 50° | 2107.1 | 1495.8 | 392.9 | 337.8 | 323.6 | 316.9 | 308.9 | 298.5 | 280.8 | 266.6 | 265.6 |
| 52.5° | 2233.6 | 1574.7 | 412.7 | 323.6 | 302.5 | 306.5 | 301.4 | 289.4 | 272.0 | 257.5 | 257.8 |
| 55° | 2353.4 | 1653.6 | 420.4 | 304.1 | 282.7 | 297.4 | 294.4 | 272.3 | 251.4 | 239.6 | 238.6 |
| 57.5° | 2484.0 | 1748.5 | 411.9 | 279.2 | 266.6 | 287.0 | 275.7 | 251.1 | 239.1 | 230.3 | 229.5 |
| 60° | 2664.7 | 1897.5 | 393.4 | 248.4 | 251.4 | 271.4 | 252.2 | 242.0 | 228.9 | 219.0 | 218.5 |
| 62.5° | 2965.1 | 2175.3 | 363.7 | 218.0 | 233.5 | 248.4 | 241.0 | 230.8 | 217.4 | 207.8 | 207.8 |
| 65° | 3409.0 | 2561.5 | 307.8 | 194.2 | 213.4 | 226.0 | 228.9 | 218.8 | 204.9 | 194.7 | 195.2 |
| 67.5° | 3783.4 | 2803.8 | 232.9 | 174.4 | 192.8 | 207.8 | 216.1 | 206.2 | 191.5 | 181.6 | 181.9 |
| 70° | *3762.8* | *2627.8* | *177.8* | *154.8* | *174.6* | *189.9* | *200.6* | *192.8* | *177.0* | *167.7* | *168.5* |
| 72.5° | 3342.2 | 2198.3 | 143.9 | 135.1 | 156.2 | 171.2 | 184.0 | 178.1 | 162.1 | 153.0 | 153.0 |
| 75° | 2455.3 | 1560.5 | 115.0 | 115.0 | 133.2 | 151.6 | 165.8 | 162.1 | 147.4 | 140.9 | 139.1 |
| 77.5° | 1035.0 | 654.7 | 90.1 | 95.5 | 110.7 | 130.2 | 147.9 | 149.2 | 136.4 | 144.4 | 131.0 |
| 80° | 275.2 | 180.5 | 68.7 | 75.1 | 86.9 | 107.5 | 128.6 | 128.1 | 114.2 | 106.7 | 99.2 |
| 82.5° | 104.8 | 71.1 | 48.9 | 53.0 | 62.8 | 82.4 | 101.9 | 105.1 | 91.2 | 78.9 | 78.9 |
| 85° | 40.4 | 30.5 | 30.2 | 31.8 | 36.6 | 54.6 | 77.0 | 79.7 | 68.7 | 58.3 | 60.2 |
| 87.5° | 10.4 | 9.1 | 11.2 | 10.7 | 16.8 | 29.2 | 44.1 | 45.7 | 42.0 | 24.3 | 34.8 |
| 90° | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 |


HS
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Peachtree City, GA 30269

# LM-79-2019: Approved Method: Electrical and Photometric Measurements of Solid-State Lighting Products

Report Prepared for

Cooper Lighting Solutions

MCGRAW EDISON

Report Number: SP1-2408-195-9

Test Date: 08/07/2024

Luminaire Tested: GALN-SB1A-830-U-5WQ

Data in this report applies to families of products including GALN-SB1A-830-U-5WQ.

Report Generated By FNC07603 / LDUCLS01DT446
Version: v7.04

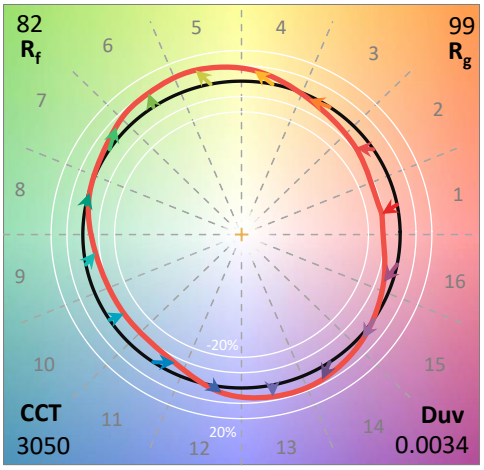
## Test Information

| | |
|---|---|
| Test Method: | LM-79-2019 |
| Report Number: | SP1-2408-195-9 |
| Test Lab: | COOPER LIGHTING SOLUTIONS |
| Photometer: | SP1 - 76IN SPHERE |
| Measurement Geometry: | 4π |
| Issue Date: | 08/07/2024 |
| Manufacturer: | COOPER LIGHTING SOLUTIONS |
| Product Line: | MCGRAW EDISON |
| Catalog Number: | **GALN-SB1A-830-U-5WQ** |
| Description: | GALLEON AREA AND ROADWAY LUMINAIRE. (1) 80 CRI, 3000K, 350MA HIGH DENSITY LIGHTSQUARE WITH 26 LEDS AND TYPE V WIDE OPTICS |

## Spectral Parameters

| | | | | | |
|---|---|---|---|---|---|
| CCT (K): | 3050 | CRI (Ra): | 81.0 | | |
| CIE u': | 0.2476 | R1: | 79.6 | R9: | 7.1 |
| CIE v': | 0.5251 | R2: | 85.6 | R10: | 67.0 |
| Duv: | 0.0034 | R3: | 92.0 | R11: | 82.7 |
| CIE x: | 0.4383 | R4: | 82.6 | R12: | 63.2 |
| CIE y: | 0.4131 | R5: | 78.9 | R13: | 80.3 |
| CIE z: | 0.1487 | R6: | 81.7 | R14: | 95.0 |
| Peak Wavelength (nm): | 603 | R7: | 85.2 | R15: | 71.7 |
| Dominant Wavelength (nm): | 581 | R8: | 62.0 | | |
| Purity: | 55.55201 | | | | |

| | |
|---|---|
| Rf: | 81.5 |
| Rg: | 99.2 |




## Test Conditions

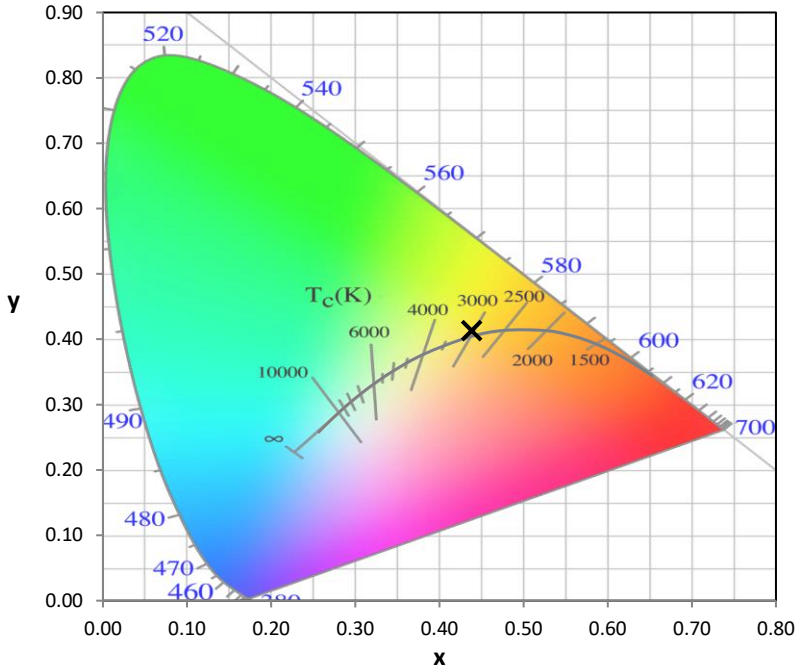
| | |
|---|---|
| Stabilization Time: | 20M |
| Operation Time: | 1H 20M |
| Sphere Temperature (°C): | 24.2 |

REPORT NUMBER: SP1-2408-195-9

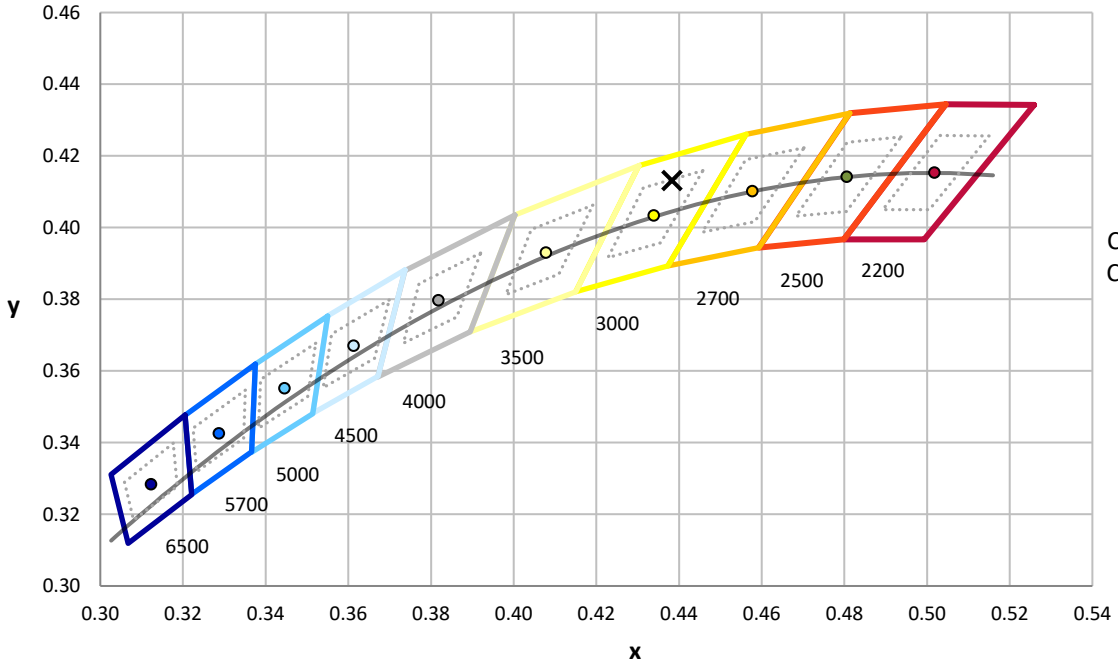
| Measurement and Test Equipment | | | |
|---|---|---|---|
| Instrument | Identification Number | Calibration Date | Calibration Due Date |
| Photometer | IN0058 | 6/18/2024 | 12/18/2024 |
| Power Meter | INXT2011004 | 2/8/2024 | 2/8/2025 |
| AC Power Source | IN0063 | 10/24/2023 | 10/24/2024 |
| DC Power Source | IN0208 | 10/24/2023 | 10/24/2024 |
| Sphere Thermometer | IN0085 | 10/24/2023 | 10/24/2024 |
| Room Thermometer | IN0046 | 10/24/2023 | 10/24/2024 |

REPORT NUMBER: SP1-2408-195-9

## CIE 1931 Chromaticity Diagram




## CIE 1931 Chromaticity Diagram with 2017 ANSI 7-Step and 4-Step Quadrangles

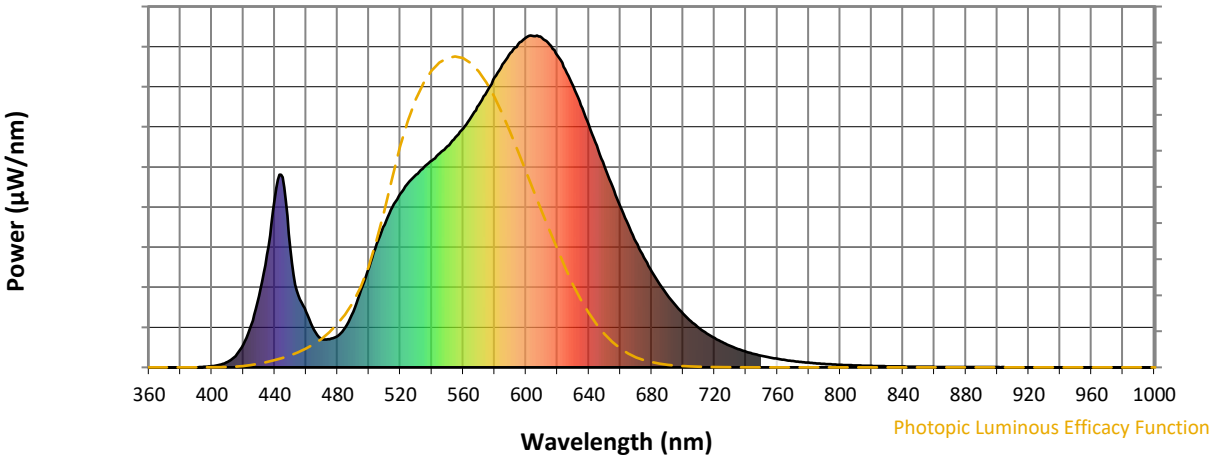



CCT = 3050K
CIE x = 0.4383
CIE y = 0.4131
Duv = 0.0034

Point lies inside the ANSI 3000K 4-step quadrangle

REPORT NUMBER: SP1-2408-195-9

## Photopic Flux vs. Wavelength

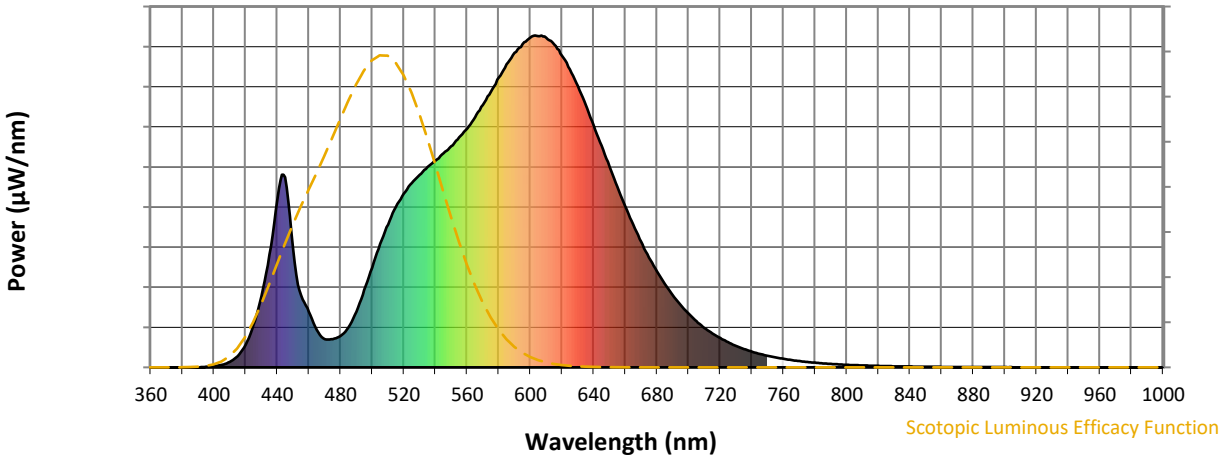



## Photopic Lumens: NR

| λ (nm) | Power W^/nm | Lumens (ϕ/nm) | λ (nm) | Power W^/nm | Lumens (ϕ/nm) | λ (nm) | Power W^/nm | Lumens (ϕ/nm) | λ (nm) | Power W^/nm | Lumens (ϕ/nm) | λ (nm) | Power W^/nm | Lumens (ϕ/nm) |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 360 | 0 | NR | 490 | 168 | NR | 620 | 940 | NR | 750 | 35 | NR | 880 | 1 | NR |
| 365 | 0 | NR | 495 | 233 | NR | 625 | 897 | NR | 755 | 30 | NR | 885 | 1 | NR |
| 370 | 0 | NR | 500 | 300 | NR | 630 | 847 | NR | 760 | 26 | NR | 890 | 1 | NR |
| 375 | 0 | NR | 505 | 372 | NR | 635 | 790 | NR | 765 | 22 | NR | 895 | 1 | NR |
| 380 | 0 | NR | 510 | 430 | NR | 640 | 730 | NR | 770 | 19 | NR | 900 | 1 | NR |
| 385 | 0 | NR | 515 | 483 | NR | 645 | 668 | NR | 775 | 16 | NR | 905 | 1 | NR |
| 390 | 0 | NR | 520 | 524 | NR | 650 | 605 | NR | 780 | 14 | NR | 910 | 0 | NR |
| 395 | 2 | NR | 525 | 555 | NR | 655 | 545 | NR | 785 | 12 | NR | 915 | 0 | NR |
| 400 | 4 | NR | 530 | 581 | NR | 660 | 485 | NR | 790 | 10 | NR | 920 | 0 | NR |
| 405 | 7 | NR | 535 | 604 | NR | 665 | 430 | NR | 795 | 9 | NR | 925 | 0 | NR |
| 410 | 17 | NR | 540 | 623 | NR | 670 | 378 | NR | 800 | 8 | NR | 930 | 0 | NR |
| 415 | 34 | NR | 545 | 645 | NR | 675 | 331 | NR | 805 | 7 | NR | 935 | 0 | NR |
| 420 | 68 | NR | 550 | 667 | NR | 680 | 290 | NR | 810 | 6 | NR | 940 | 0 | NR |
| 425 | 128 | NR | 555 | 693 | NR | 685 | 251 | NR | 815 | 5 | NR | 945 | 0 | NR |
| 430 | 214 | NR | 560 | 719 | NR | 690 | 218 | NR | 820 | 4 | NR | 950 | 0 | NR |
| 435 | 339 | NR | 565 | 754 | NR | 695 | 188 | NR | 825 | 4 | NR | 955 | 0 | NR |
| 440 | 507 | NR | 570 | 791 | NR | 700 | 162 | NR | 830 | 3 | NR | 960 | 0 | NR |
| 445 | 573 | NR | 575 | 830 | NR | 705 | 139 | NR | 835 | 3 | NR | 965 | 0 | NR |
| 450 | 356 | NR | 580 | 873 | NR | 710 | 119 | NR | 840 | 3 | NR | 970 | 0 | NR |
| 455 | 217 | NR | 585 | 913 | NR | 715 | 102 | NR | 845 | 2 | NR | 975 | 0 | NR |
| 460 | 168 | NR | 590 | 948 | NR | 720 | 88 | NR | 850 | 2 | NR | 980 | 0 | NR |
| 465 | 113 | NR | 595 | 974 | NR | 725 | 76 | NR | 855 | 2 | NR | 985 | 0 | NR |
| 470 | 85 | NR | 600 | 994 | NR | 730 | 65 | NR | 860 | 1 | NR | 990 | 0 | NR |
| 475 | 85 | NR | 605 | 998 | NR | 735 | 55 | NR | 865 | 1 | NR | 995 | 0 | NR |
| 480 | 94 | NR | 610 | 994 | NR | 740 | 47 | NR | 870 | 1 | NR | 1000 | 0 | NR |
| 485 | 120 | NR | 615 | 973 | NR | 745 | 41 | NR | 875 | 1 | NR | | | |

REPORT NUMBER: SP1-2408-195-9

## Scotopic Flux vs. Wavelength

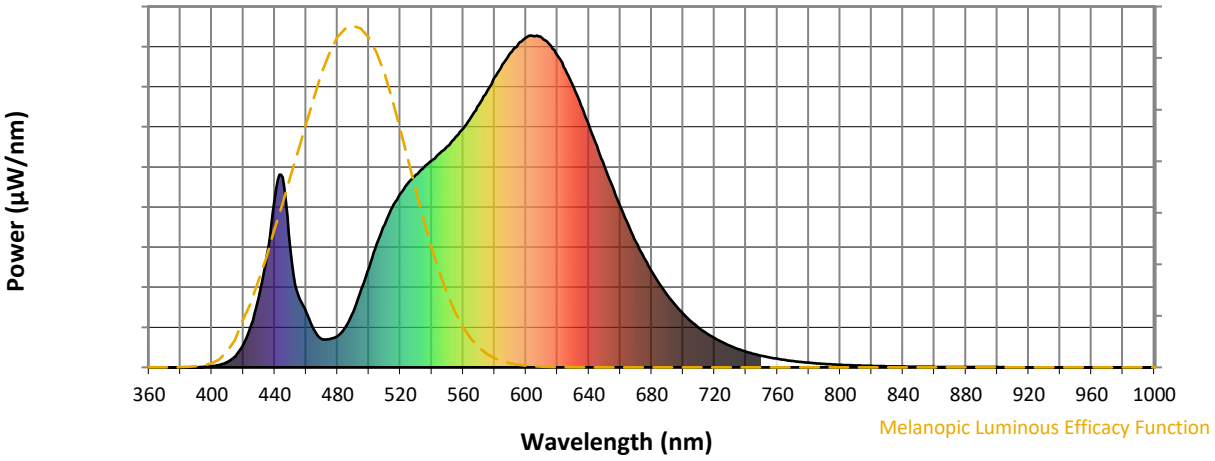



**Scotopic Lumens: NR** **S/P: 1.27**

| λ (nm) | Power W^/nm | Lumens (ϕ/nm) | λ (nm) | Power W^/nm | Lumens (ϕ/nm) | λ (nm) | Power W^/nm | Lumens (ϕ/nm) | λ (nm) | Power W^/nm | Lumens (ϕ/nm) | λ (nm) | Power W^/nm | Lumens (ϕ/nm) |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 360 | 0 | NR | 490 | 168 | NR | 620 | 940 | NR | 750 | 35 | NR | 880 | 1 | NR |
| 365 | 0 | NR | 495 | 233 | NR | 625 | 897 | NR | 755 | 30 | NR | 885 | 1 | NR |
| 370 | 0 | NR | 500 | 300 | NR | 630 | 847 | NR | 760 | 26 | NR | 890 | 1 | NR |
| 375 | 0 | NR | 505 | 372 | NR | 635 | 790 | NR | 765 | 22 | NR | 895 | 1 | NR |
| 380 | 0 | NR | 510 | 430 | NR | 640 | 730 | NR | 770 | 19 | NR | 900 | 1 | NR |
| 385 | 0 | NR | 515 | 483 | NR | 645 | 668 | NR | 775 | 16 | NR | 905 | 1 | NR |
| 390 | 0 | NR | 520 | 524 | NR | 650 | 605 | NR | 780 | 14 | NR | 910 | 0 | NR |
| 395 | 2 | NR | 525 | 555 | NR | 655 | 545 | NR | 785 | 12 | NR | 915 | 0 | NR |
| 400 | 4 | NR | 530 | 581 | NR | 660 | 485 | NR | 790 | 10 | NR | 920 | 0 | NR |
| 405 | 7 | NR | 535 | 604 | NR | 665 | 430 | NR | 795 | 9 | NR | 925 | 0 | NR |
| 410 | 17 | NR | 540 | 623 | NR | 670 | 378 | NR | 800 | 8 | NR | 930 | 0 | NR |
| 415 | 34 | NR | 545 | 645 | NR | 675 | 331 | NR | 805 | 7 | NR | 935 | 0 | NR |
| 420 | 68 | NR | 550 | 667 | NR | 680 | 290 | NR | 810 | 6 | NR | 940 | 0 | NR |
| 425 | 128 | NR | 555 | 693 | NR | 685 | 251 | NR | 815 | 5 | NR | 945 | 0 | NR |
| 430 | 214 | NR | 560 | 719 | NR | 690 | 218 | NR | 820 | 4 | NR | 950 | 0 | NR |
| 435 | 339 | NR | 565 | 754 | NR | 695 | 188 | NR | 825 | 4 | NR | 955 | 0 | NR |
| 440 | 507 | NR | 570 | 791 | NR | 700 | 162 | NR | 830 | 3 | NR | 960 | 0 | NR |
| 445 | 573 | NR | 575 | 830 | NR | 705 | 139 | NR | 835 | 3 | NR | 965 | 0 | NR |
| 450 | 356 | NR | 580 | 873 | NR | 710 | 119 | NR | 840 | 3 | NR | 970 | 0 | NR |
| 455 | 217 | NR | 585 | 913 | NR | 715 | 102 | NR | 845 | 2 | NR | 975 | 0 | NR |
| 460 | 168 | NR | 590 | 948 | NR | 720 | 88 | NR | 850 | 2 | NR | 980 | 0 | NR |
| 465 | 113 | NR | 595 | 974 | NR | 725 | 76 | NR | 855 | 2 | NR | 985 | 0 | NR |
| 470 | 85 | NR | 600 | 994 | NR | 730 | 65 | NR | 860 | 1 | NR | 990 | 0 | NR |
| 475 | 85 | NR | 605 | 998 | NR | 735 | 55 | NR | 865 | 1 | NR | 995 | 0 | NR |
| 480 | 94 | NR | 610 | 994 | NR | 740 | 47 | NR | 870 | 1 | NR | 1000 | 0 | NR |
| 485 | 120 | NR | 615 | 973 | NR | 745 | 41 | NR | 875 | 1 | NR | | | |

REPORT NUMBER: SP1-2408-195-9

## Melanopic Flux vs. Wavelength




**Melanopic Lumens: NR** **M/P: 2.32**

| λ (nm) | Power W^/nm | Lumens (ϕ/nm) | λ (nm) | Power W^/nm | Lumens (ϕ/nm) | λ (nm) | Power W^/nm | Lumens (ϕ/nm) | λ (nm) | Power W^/nm | Lumens (ϕ/nm) | λ (nm) | Power W^/nm | Lumens (ϕ/nm) |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 360 | 0 | NR | 490 | 168 | NR | 620 | 940 | NR | 750 | 35 | NR | 880 | 1 | NR |
| 365 | 0 | NR | 495 | 233 | NR | 625 | 897 | NR | 755 | 30 | NR | 885 | 1 | NR |
| 370 | 0 | NR | 500 | 300 | NR | 630 | 847 | NR | 760 | 26 | NR | 890 | 1 | NR |
| 375 | 0 | NR | 505 | 372 | NR | 635 | 790 | NR | 765 | 22 | NR | 895 | 1 | NR |
| 380 | 0 | NR | 510 | 430 | NR | 640 | 730 | NR | 770 | 19 | NR | 900 | 1 | NR |
| 385 | 0 | NR | 515 | 483 | NR | 645 | 668 | NR | 775 | 16 | NR | 905 | 1 | NR |
| 390 | 0 | NR | 520 | 524 | NR | 650 | 605 | NR | 780 | 14 | NR | 910 | 0 | NR |
| 395 | 2 | NR | 525 | 555 | NR | 655 | 545 | NR | 785 | 12 | NR | 915 | 0 | NR |
| 400 | 4 | NR | 530 | 581 | NR | 660 | 485 | NR | 790 | 10 | NR | 920 | 0 | NR |
| 405 | 7 | NR | 535 | 604 | NR | 665 | 430 | NR | 795 | 9 | NR | 925 | 0 | NR |
| 410 | 17 | NR | 540 | 623 | NR | 670 | 378 | NR | 800 | 8 | NR | 930 | 0 | NR |
| 415 | 34 | NR | 545 | 645 | NR | 675 | 331 | NR | 805 | 7 | NR | 935 | 0 | NR |
| 420 | 68 | NR | 550 | 667 | NR | 680 | 290 | NR | 810 | 6 | NR | 940 | 0 | NR |
| 425 | 128 | NR | 555 | 693 | NR | 685 | 251 | NR | 815 | 5 | NR | 945 | 0 | NR |
| 430 | 214 | NR | 560 | 719 | NR | 690 | 218 | NR | 820 | 4 | NR | 950 | 0 | NR |
| 435 | 339 | NR | 565 | 754 | NR | 695 | 188 | NR | 825 | 4 | NR | 955 | 0 | NR |
| 440 | 507 | NR | 570 | 791 | NR | 700 | 162 | NR | 830 | 3 | NR | 960 | 0 | NR |
| 445 | 573 | NR | 575 | 830 | NR | 705 | 139 | NR | 835 | 3 | NR | 965 | 0 | NR |
| 450 | 356 | NR | 580 | 873 | NR | 710 | 119 | NR | 840 | 3 | NR | 970 | 0 | NR |
| 455 | 217 | NR | 585 | 913 | NR | 715 | 102 | NR | 845 | 2 | NR | 975 | 0 | NR |
| 460 | 168 | NR | 590 | 948 | NR | 720 | 88 | NR | 850 | 2 | NR | 980 | 0 | NR |
| 465 | 113 | NR | 595 | 974 | NR | 725 | 76 | NR | 855 | 2 | NR | 985 | 0 | NR |
| 470 | 85 | NR | 600 | 994 | NR | 730 | 65 | NR | 860 | 1 | NR | 990 | 0 | NR |
| 475 | 85 | NR | 605 | 998 | NR | 735 | 55 | NR | 865 | 1 | NR | 995 | 0 | NR |
| 480 | 94 | NR | 610 | 994 | NR | 740 | 47 | NR | 870 | 1 | NR | 1000 | 0 | NR |
| 485 | 120 | NR | 615 | 973 | NR | 745 | 41 | NR | 875 | 1 | NR | | | |

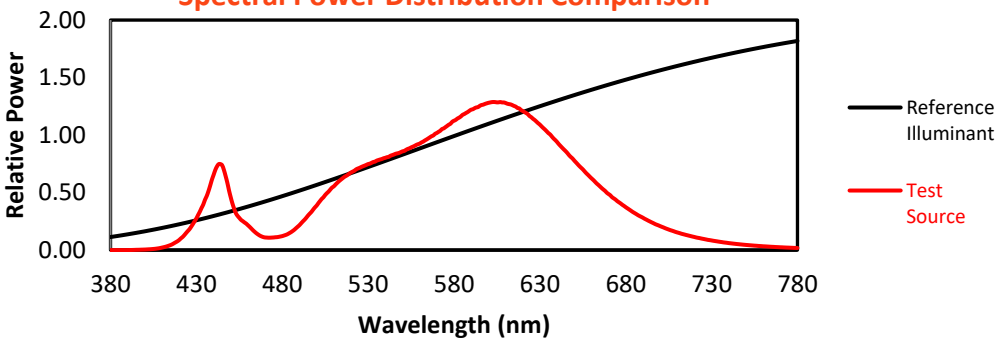
REPORT NUMBER: SP1-2408-195-9

# TM-30-18

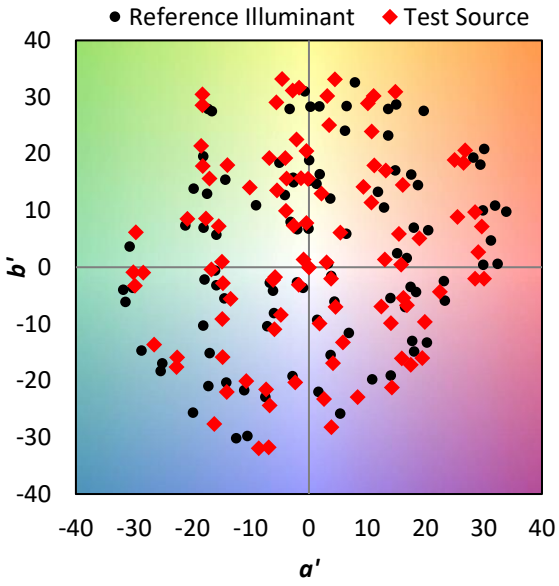
## Summary

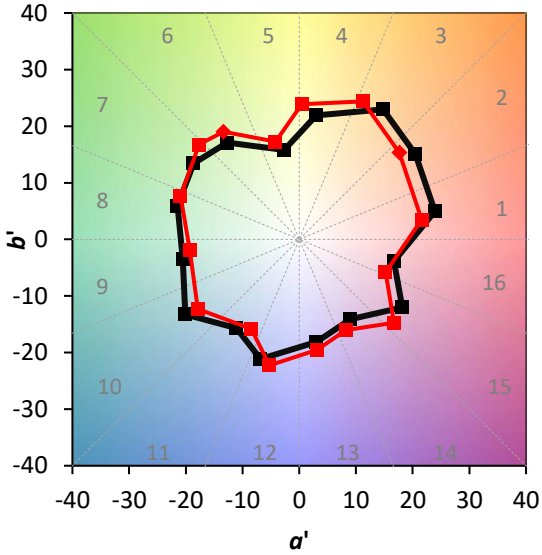
$R_f$ = 81.5
$R_g$ = 99.2
CIE $R_a$ = 81.0
$R_9$ = 7.1

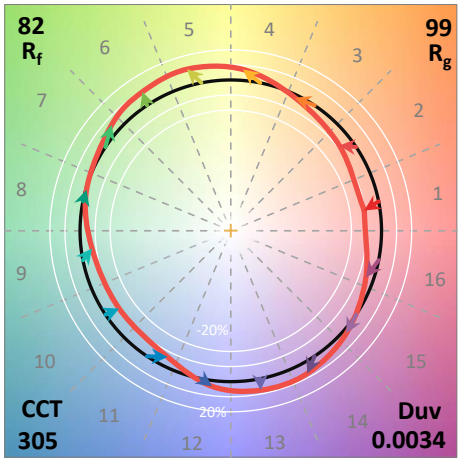
## Spectral Power Distribution Comparison

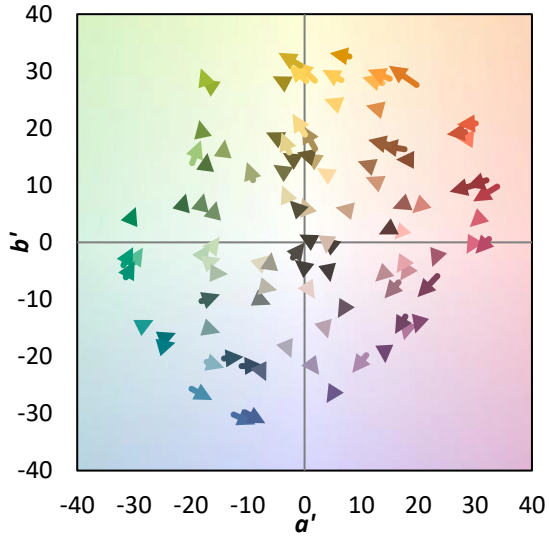



## Color Vector Graphics



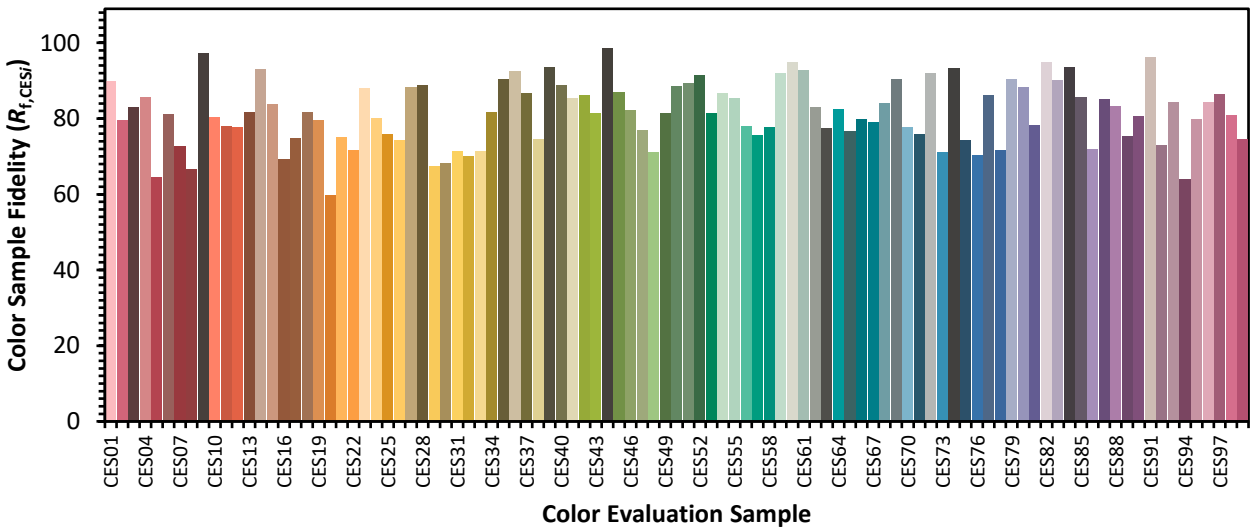



REPORT NUMBER: SP1-2408-195-9

# TM-30-18

**Individual Sample Fidelity Index ($R_{f,i}$)**

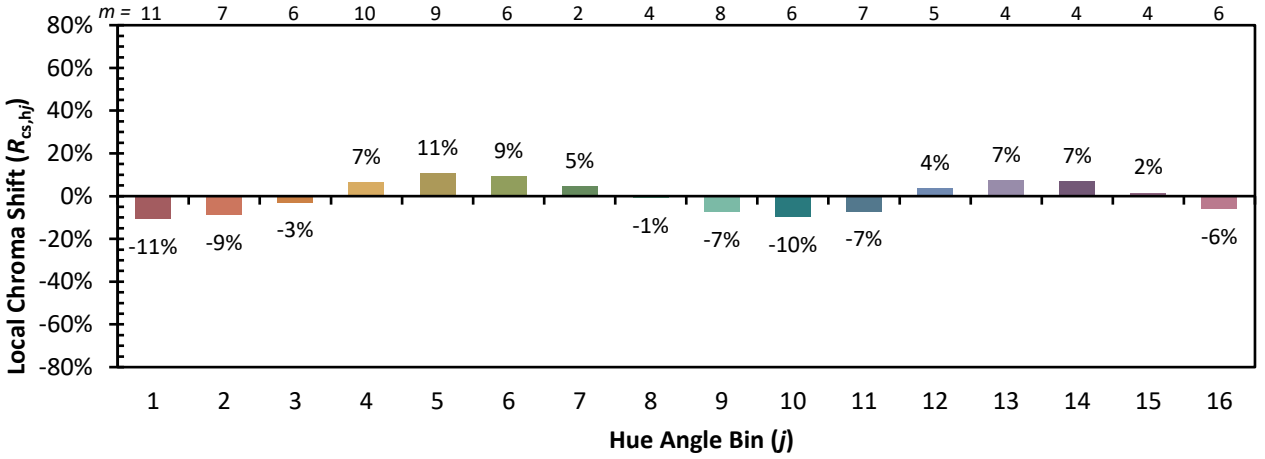
| | | | |
|---|---|---|---|
| CES01 = 86 | CES26 = 74 | CES51 = 89 | CES76 = 70 |
| CES02 = 63 | CES27 = 88 | CES52 = 92 | CES77 = 86 |
| CES03 = 31 | CES28 = 89 | CES53 = 81 | CES78 = 72 |
| CES04 = 70 | CES29 = 67 | CES54 = 87 | CES79 = 90 |
| CES05 = 50 | CES30 = 68 | CES55 = 85 | CES80 = 88 |
| CES06 = 51 | CES31 = 71 | CES56 = 78 | CES81 = 78 |
| CES07 = 42 | CES32 = 70 | CES57 = 76 | CES82 = 95 |
| CES08 = 41 | CES33 = 71 | CES58 = 78 | CES83 = 90 |
| CES09 = 29 | CES34 = 82 | CES59 = 92 | CES84 = 94 |
| CES10 = 76 | CES35 = 90 | CES60 = 95 | CES85 = 86 |
| CES11 = 59 | CES36 = 93 | CES61 = 93 | CES86 = 72 |
| CES12 = 65 | CES37 = 87 | CES62 = 83 | CES87 = 85 |
| CES13 = 43 | CES38 = 75 | CES63 = 77 | CES88 = 83 |
| CES14 = 74 | CES39 = 94 | CES64 = 83 | CES89 = 75 |
| CES15 = 71 | CES40 = 89 | CES65 = 77 | CES90 = 81 |
| CES16 = 47 | CES41 = 85 | CES66 = 80 | CES91 = 96 |
| CES17 = 50 | CES42 = 86 | CES67 = 79 | CES92 = 73 |
| CES18 = 56 | CES43 = 81 | CES68 = 84 | CES93 = 84 |
| CES19 = 72 | CES44 = 99 | CES69 = 91 | CES94 = 64 |
| CES20 = 66 | CES45 = 87 | CES70 = 78 | CES95 = 80 |
| CES21 = 87 | CES46 = 82 | CES71 = 76 | CES96 = 84 |
| CES22 = 79 | CES47 = 77 | CES72 = 92 | CES97 = 87 |
| CES23 = 92 | CES48 = 71 | CES73 = 71 | CES98 = 81 |
| CES24 = 91 | CES49 = 81 | CES74 = 93 | CES99 = 74 |
| CES25 = 72 | CES50 = 89 | CES75 = 74 | |

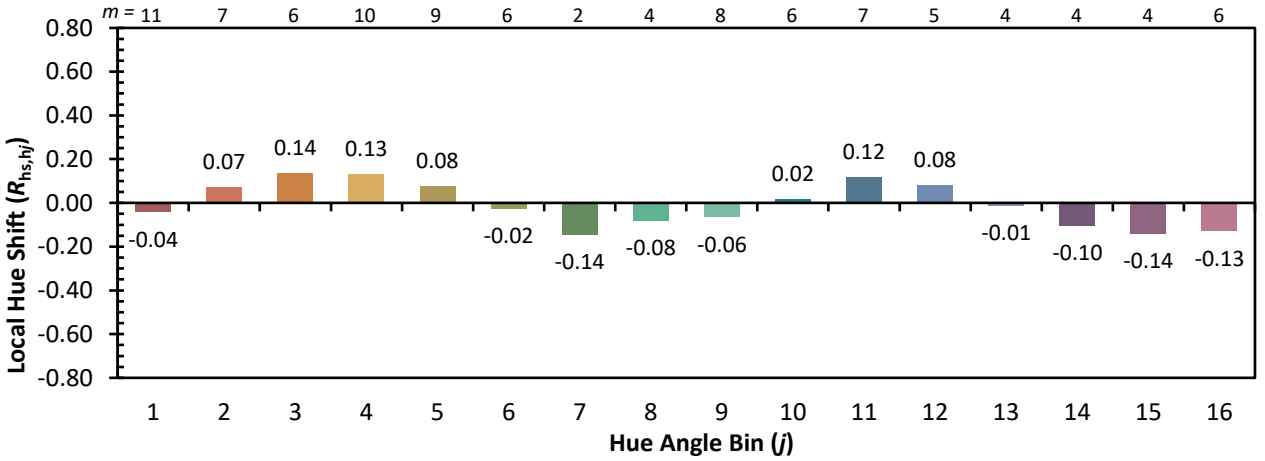


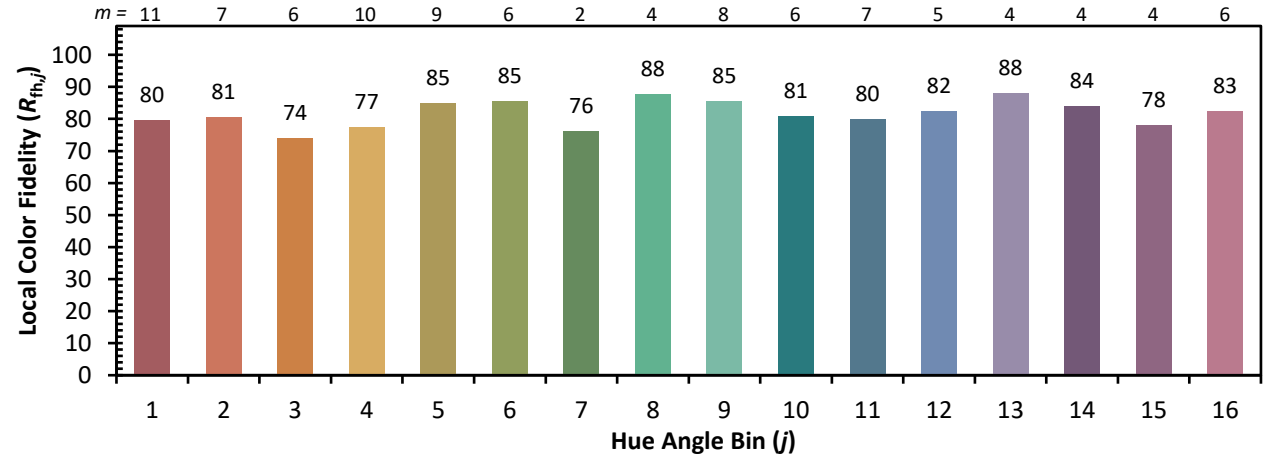
REPORT NUMBER: SP1-2408-195-9

**TM-30-18**

## Color Rendition by Hue-Angle Bin



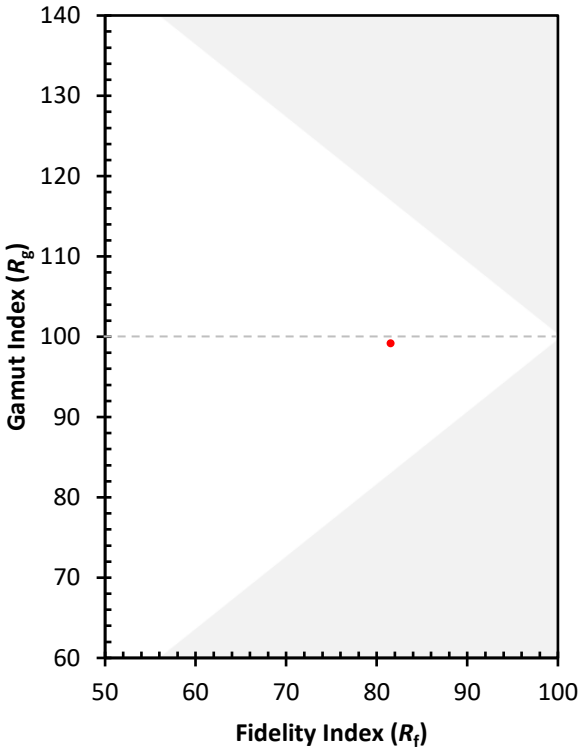



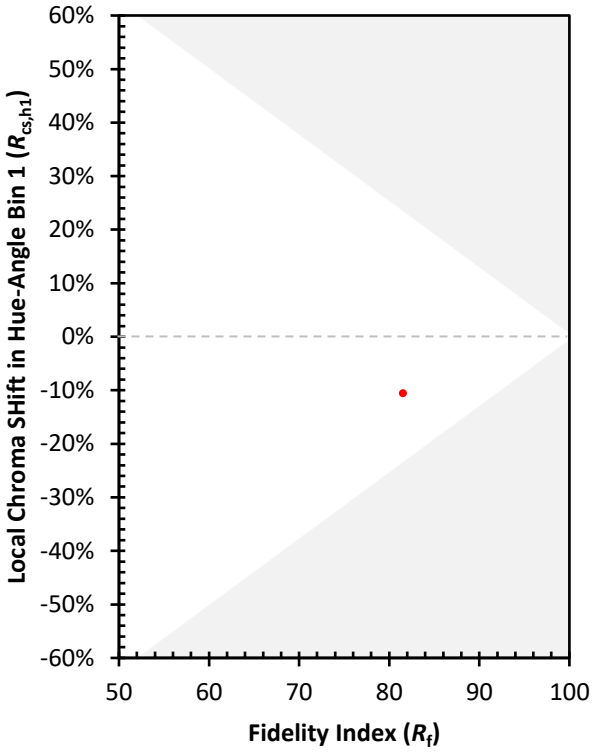



REPORT NUMBER: SP1-2408-195-9

# TM-30-18

## Measure Comparisons




(END OF REPORT)